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BEFORE THE

Federal Communications Commission

WASHINGTON, D.C.

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of)
)
Amendment of Section 73.622(b))
Digital Television Table of Allotments) MM Docket No. 99-____
Scottsbluff, Nebraska) RM-____

To: Chief, Allocations Branch

PETITION FOR RULE MAKING

Duhamel Broadcasting Enterprises ("Duhamel"), licensee of television station KDUH-TV (NTSC Channel 4), Scottsbluff, Nebraska, by its undersigned attorneys and pursuant to Section 1.401 of the Commission's rules, hereby petitions the Commission to amend Section 73.622(b) of its rules to substitute DTV Channel 7 for DTV Channel 20 at Scottsbluff, Nebraska, as the digital television channel assigned to KDUH-TV.

1. As demonstrated by the attached Technical Narrative which supports KDUH-TV's future application for a digital construction permit should the instant Petition be granted, DTV Channel 7 can be allotted to KDUH-TV for digital television using the station's authorized NTSC transmitter site, in full compliance with all applicable coverage and allocation criteria. Specifically, the allocation of DTV Channel 7 to Scottsbluff, Nebraska at the KDUH-TV site will permit coverage of the entire community of Scottsbluff with the requisite 36 dBu signal strength. In addition, the allocation will not increase interference to more than an additional two percent of the population served by any other analog or digital television station.

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2. Should the Commission allocate the channel requested herein, Duhamel will promptly apply for a construction permit for the facility and undertake to build and operate the station if the permit is granted.

3. Allotment of a VHF channel, rather than a UHF channel, is necessary to facilitate the introduction of digital television service to the vast, sparsely populated, rural area served by KDUH-TV. The assignment of UHF Channel 21 to KDUH-TV's digital operation will require Duhamel to construct a new tower facility which is capable of supporting the UHF antenna. This is because the tower KDUH-TV's NTSC operation currently utilizes cannot support the weight of an additional UHF antenna (although it would support the weight of a VHF antenna). If Duhamel could avoid building a new tower for its DTV antenna, it could more expeditiously begin operations of its digital television station in Scottsbluff. Eliminating the need to build a new tower would also avoid any local zoning and aeronautical controversies and viewer disruption due to antenna orientation problems and permit Duhamel to allocate its resources toward the investment in other equipment and facilities necessary to get the DTV facility on the air. In addition, the assignment of Channel 20 will necessitate Duhamel installing a significantly larger and more costly transmitter and transmission line and operating with a considerably higher and more costly power output level than would be required for VHF DTV operations, in order to serve this large, but sparsely populated market. Thus, the greatly increased cost involved in constructing a new tower required to support a UHF DTV operation, and the increased equipment costs and sustained operating costs required to operate a UHF DTV facility present a real impediment to the implementation of digital television in this small television market, an impediment that can be removed by substituting DTV Channel 7 for DTV Channel 20. In addition, adoption of the proposed substitution would result in service to a greater number of

people than would operation from the station's current DTV allocation. Finally, it should be noted that the Scottsbluff market historically has been served by VHF facilities. Thus, the assignment of Channel 7 is expected to facilitate viewer reception of KDUH-DT.

For the foregoing reasons, Duhamel respectfully requests that the Commission promptly initiate the rule making requested herein and that it substitute DTV Channel 7 for DTV Channel 20 at Scottsbluff, Nebraska as the digital television channel assigned to KDUH-TV.

Respectfully submitted,

DUHAMEL BROADCASTING ENTERPRISES

By: 

Richard R. Zaragoza
Lauren Lynch Flick

Its Attorneys

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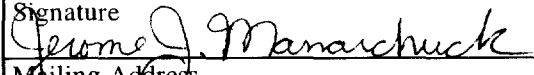
Dated: October 28, 1999

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EXHIBIT A

SECTION III PREPARER'S CERTIFICATION

I certify that I have prepared Section III (Engineering Data) on behalf of the applicant, and that after such preparation, I have examined and found it to be accurate and true to the best of my knowledge and belief.

Name Jerome J. Manarchuck		Relationship to Applicant (e.g., Consulting Engineer) Technical Consultant	
Signature 		Date October 21, 1999	
Mailing Address 201 Fletcher Ave.			
City Sarasota		State or Country (if foreign address) FL	ZIP Code 34237
Telephone Number (include area code) (941) 329-6000		E-Mail Address (if available) jerry@dlr.com	

WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT
(U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT
(U.S. CODE, TITLE 47, SECTION 312(a)(1)), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503).

SECTION III-D - DTV Engineering

Complete Questions 1-5 of the Certification Checklist and provide all data and information for the proposed facility, as requested in Technical Specifications, Items 1-13.

Certification Checklist: A correct answer of "Yes" to all of the questions below will ensure an expeditious grant of a construction permit. However, if the proposed facility is located within the Canadian or Mexican borders, coordination of the proposal under the appropriate treaties may be required prior to grant of the application. An answer of "No" will require additional evaluation of the applicable information in this form before a construction permit can be granted.

1. The proposed DTV facility complies with 47 C.F.R. Section 73.622 in the following respects:
 - (a) It will operate on the DTV channel for this station as established in 47 C.F.R. Section 73.622. ☐ Yes ☒ No
 - (b) It will operate from a transmitting antenna located within 5.0 km (3.1 miles) of the DTV reference site for this station as established in 47 C.F.R. Section 73.622. ☒ Yes ☐ No
 - (c) It will operate with an effective radiated power (ERP) and antenna height above average terrain (HAAT) that do not exceed the DTV reference ERP and HAAT for this station as established in 47 C.F.R. Section 73.622. ☐ Yes ☒ No
2. The proposed facility will not have a significant environmental impact, including exposure of workers or the general public to levels of RF radiation exceeding the applicable health and safety guidelines, and therefore will not come within 47 C.F.R. Section 1.1307. ☒ Yes ☐ No

Applicant must **submit the Exhibit** called for in Item 13.
3. Pursuant to 47 C.F.R. Section 73.625, the DTV coverage contour of the proposed facility will encompass the allotted principal community. ☒ Yes ☐ No
4. The requirements of 47 C.F.R. Section 73.1030 regarding notification to radio astronomy installations, radio receiving installations and FCC monitoring stations have either been satisfied or are not applicable. ☒ Yes ☐ No
5. The antenna structure to be used by this facility has been registered by the Commission and will not require reregistration to support the proposed antenna, OR the FAA has previously determined that the proposed structure will not adversely effect safety in air navigation and this structure qualifies for later registration under the Commission's phased registration plan, OR the proposed installation on this structure does not require notification to the FAA pursuant to 47 C.F.R. Section 17.7. ☒ Yes ☐ No

SECTION III-D - DTV Engineering

TECHNICAL SPECIFICATIONS

Ensure that the specifications below are accurate. Contradicting data found elsewhere in this application will be disregarded. All items must be completed. The response "on file" is not acceptable.

TECH BOX

1. Channel Number: DTV 7 Analog TV, if any 4
2. Zone: ☐ I ☒ II ☐ III
3. Antenna Location Coordinates: (NAD 27)
42 ° 10 ' 21 " ☒ N ☐ S Latitude
103 ° 13 ' 57 " ☐ E ☒ W Longitude
4. Antenna Structure Registration Number: _____
☐ Not applicable ☐ FAA Notification Filed with FAA
5. Antenna Location Site Elevation Above Mean Sea Level: 1,326.5 meters
6. Overall Tower Height Above Ground Level: 598.9 meters
7. Height of Radiation Center Above Ground Level: 565.4 meters
8. Height of Radiation Center Above Average Terrain: 592 meters
9. Maximum Effective Radiated Power (average power): 32.4 kW
10. Antenna Specifications:

Manufacturer	Model
a. <u>Dielectric</u>	<u>THV-6A7-RC135</u>

b. Electrical Beam Tilt: 0.5 degrees ☐ Not Applicable

c. Mechanical Beam Tilt: _____ degrees toward azimuth _____ degrees True ☒ Not Applicable

Attach as an Exhibit all data specified in 47 C.F.R. Section 73.625(c).

Exhibit No. Figure 2

d. Polarization: ☒ Horizontal ☐ Circular ☐ Elliptical

TECH BOX

- e. Directional Antenna Relative Field Values: ☐ Not applicable (Nondirectional)
 Rotation _____ ° ☒ No rotation

Degree	Value	Degree	Value	Degree	Value	Degree	Value	Degree	Value	Degree	Value
0	0.568	60	0.761	120	0.993	180	0.995	240	0.993	300	0.761
10	0.573	70	0.820	130	0.999	190	0.996	250	0.979	310	0.704
20	0.588	80	0.875	140	1.000	200	0.997	260	0.956	320	0.654
30	0.615	90	0.921	150	0.999	210	0.999	270	0.921	330	0.615
40	0.654	100	0.956	160	0.997	220	1.000	280	0.875	340	0.588
50	0.704	110	0.979	170	0.996	230	0.999	290	0.820	350	0.573
Additional Azimuths											

If a directional antenna is proposed, the requirements of 47 C.F.R. Section 73.625(c) must be satisfied. **Exhibit required.**

Exhibit No.
Figure 2

11. Does the proposed facility satisfy the interference protection provisions of 47 C.F.R. Section 73.623(a)? (Applicable only if **Certification Checklist** Items 1(a), (b), or (c) are answered "No.") ☒ Yes ☐ No

If "No," attach as an Exhibit justification therefor, including a summary of any related previously granted waivers.

Exhibit No.
n/a

12. If the proposed facility will not satisfy the coverage requirement of 47 C.F.R. Section 73.625, attach as an Exhibit justification therefor. (Applicable only if **Certification Checklist** Item 3 is answered "No.")

Exhibit No.
n/a

13. **Environmental Protection Act. Submit in an Exhibit** the following:

Exhibit No.
Text

- a. If **Certification Checklist** Item 3 is answered "Yes," a brief explanation of why an Environmental Assessment is not required. Also describe in the Exhibit the steps that will be taken to limit RF radiation exposure to the public and to persons authorized access to the tower site.

By checking "Yes" to **Certification Checklist** Item 3, the applicant also certifies that it, in coordination with other users of the site, will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic exposure in excess of FCC guidelines.

If **Certification Checklist** Item 3 is answered "No," an Environmental Assessment as required by 47 C.F.R. Section 1.1311.

PREPARER'S CERTIFICATION IN SECTION III MUST BE COMPLETED AND SIGNED.

TECHNICAL EXHIBIT
APPLICATION FOR DTV CONSTRUCTION PERMIT
STATION KDUH-DT
SCOTTSBLUFF, NEBRASKA

October 21, 1999

CH 7 32.4 KW (MAX-DA) 592 M

TECHNICAL EXHIBIT
APPLICATION FOR DTV CONSTRUCTION PERMIT
STATION KDUH-DT
SCOTTSBLUFF, NEBRASKA
CH 7 32.4 KW 592 M

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TECHNICAL EXHIBIT
APPLICATION FOR DTV CONSTRUCTION PERMIT
STATION KDUH-DT
SCOTTSBLUFF, NEBRASKA
CH 7 32.4 KW (MAX-DA) 592 M

Technical Narrative

This Technical Exhibit supports an application for television (TV) station KDUH-TV on NTSC (analog) channel 4 at Scottsbluff, Nebraska. This application requests a construction permit (CP) for a digital television (DTV) operation on channel 7 at Scottsbluff. The Federal Communications Commission (FCC) assigned channel 20 as KDUH-TV's DTV allotment in the Memorandum, Opinion and Order (MO&O) concerning reconsideration of the 6th Report and Order in MM Docket No. 87-268.

The FCC assigned an ERP of 1000 kW-DA at an antenna HAAT of 610 meters for the DTV allotment on channel 20. However, station KDUH-DT proposes to use channel 7 for its DTV facility.

Station KDUH-DT wishes to operate on channel 7 for the following reasons. If authorized, the proposed facility would provide FCC predicted noise limited coverage to an area of 44,895 square kilometers in which 104,860 persons reside. Conversely, if KDUH-DT must operate on its allotted UHF channel (20), it intends to construct a minimal non-directional UHF facility which would comply with the FCC's city coverage requirement. In doing so, the coverage area would decrease to approximately 8,713 square kilometers and the service population would decrease to

42,428 persons. This is a reduction of approximately 81% in coverage area and 60% in population.

Secondly, the use of channel 7 would make it easier for current KDUH-TV viewers to locate the DTV operation, as normal viewing is on the VHF band.

Finally, use of a VHF channel would allow for a substantially less transmitter power and smaller antenna to serve approximately the same coverage area as a comparable UHF DTV facility. This would reduce the applicants initial capital investment as well as overhead costs. Thus, the additional resources would be available for investment in DTV programming.

For the above reasons, the FCC is respectfully requested to change KDUH-TV's DTV allotment from channel 20 to channel 7.

Station KDUH-TV proposes to operate DTV channel 7 at its allotted DTV site (42-10-21 N, 103-15-57 W). It is proposed to operate with Dielectric THV-6A7-R C135 "cardioid" type directional antenna with a maximum ERP of 32.4 kilowatts and an HAAT of 592 meters.

The proposed KDUH-TV DTV facilities (32.4 kW, 592 m) comply with Section 73.622(f)(6) of the FCC's rules concerning maximum allowable ERP and antenna height for DTV stations.

A site map is not being submitted since this information is already on file for the KDUH-TV analog operation. A sketch of antenna and pertinent elevations are included as Figure 1. The FCC antenna registration number is 1026675.

Figure 2 is the horizontal and vertical plane radiation patterns for the proposed DTV antenna system.

There are no known authorized full service AM stations within 5 kilometers (3 miles) of the KDUH-TV transmitter site. Station KPNY, CH 271C1 at Alliance, Nebraska is the only full service FM or TV station within 16 kilometers (10 miles) of the proposed DTV site. Although no adverse electromagnetic impact is expected, the applicant recognizes its responsibility to correct problems that result from its proposed DTV operation.

The KDUH-TV transmitter site is approximately 759 kilometers from the closest point of the Canadian border. The site is more than 1,191 kilometers from the closest point of the Mexican border. The closest FCC monitoring station is at Grand Island, Nebraska, approximately 423 kilometers to the east. The closest point of the National Radio Quiet Zone (VA/WV) is more than 1,937 kilometers to the east. The closest point of the Table Mountain Radio Quiet Zone (CO) is approximately 280 kilometers to the southeast. The closest radio astronomy site operating on TV channel 37 is at Los Alamos, New Mexico, approximately 757 kilometers to the south-southeast. These separations are sufficient to not be a concern for coordination purposes.

Figure 3 is a map showing the DTV predicted coverage contour. The map provides the predicted 36 dBu f(50,90) noise limited contour. The extent of the contour has been calculated using the normal FCC prediction method. The Scottsbluff city limits were derived from information contained in the 1990 U.S. Census for Nebraska. The population within the predicted 36 dBu contour is based on

1990 Census information. The U.S. land area within the predicted 36 dBu contour is based on the use of a computer algorithm.

Figure 4 is the separation study for DTV channel 7 at the KDUH-TV site. The study has been used to determine the assignments requiring interference studies using the procedures outlined in the FCC's OET-69 bulletin.¹ Interference calculations for the proposed KDUH-TV DTV operation are summarized below.

<u>Station</u>	<u>Channel</u>	<u>FCC Service Population</u>	<u>Prop. DTV Interference Population</u>
KEVN-TV, Rapid City, SD	NTSC-7	136,751	2,618 (1.9%)
KMNE-TV, Bassett, NE	NTSC-7	52,482	192 (0.4%)
KMGH-TV, Denver, CO	NTSC-7	2,401,427	20,487 (0.9%)
KMGH-TV (CP)	NTSC-7	2,399,391	20,472 (0.9%)

From the above, it is apparent that the proposed KDUH-TV operation on channel 7 complies with the FCC's 2%/10% interference standard with all authorized analog DTV assignments.

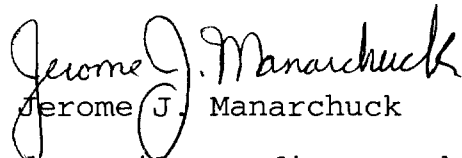
Although a secondary service, an examination was made of the low power television (LPTV) stations potentially impacted by the proposed KDUH-TV DTV operation on channel 7 as compared to the current DTV allotment on channel 20. It

¹ The du Treil, Lundin & Rackley, Inc. DTV interference analysis program is based on the program and procedures adopted by the FCC in the Sixth Report and Order and subsequent Memorandum Opinion and Order. The principles outlined in OET Bulletin No. 69 are employed except that annular sector cells are employed instead of square grid cells of 4 square kilometers in area. The annular sector cells are 1-arc degree by 1 kilometer in dimension. The annular sector cell areas vary from approximately 0.02 square kilometer close to the station transmitter site to 2 square kilometers at the greatest extent of a station's protected contour. In some instances, the resulting higher cell resolution of the DLR routine produces different results than the standard FCC 4-square-kilometer FCC grid method. However, the DLR routine results have been found to closely agree with the FCC results when the FCC uses higher resolution (i.e. smaller grid cell area) in its program.

does not appear at this time that any LPTV station will be displaced by the proposed KDUH-TV DTV operation on channel 7.

The proposed KDUH-TV DTV facilities were evaluated in terms of potential radio frequency (RF) energy exposure at ground level to workers and the general public. The radiation center for the KDUH-TV DTV antenna is located 565 meters above ground level. The maximum DTV ERP is 32.4 kW. A relative field value of 0.16 is presumed for the antenna's downward radiation (see Figure 4). The calculated power density at two meters above ground level is 0.0001 mW/cm^2 . This is less than 0.05% of the FCC's recommended limit of 0.2 mW/cm^2 for channel 7 for an "uncontrolled" environment.

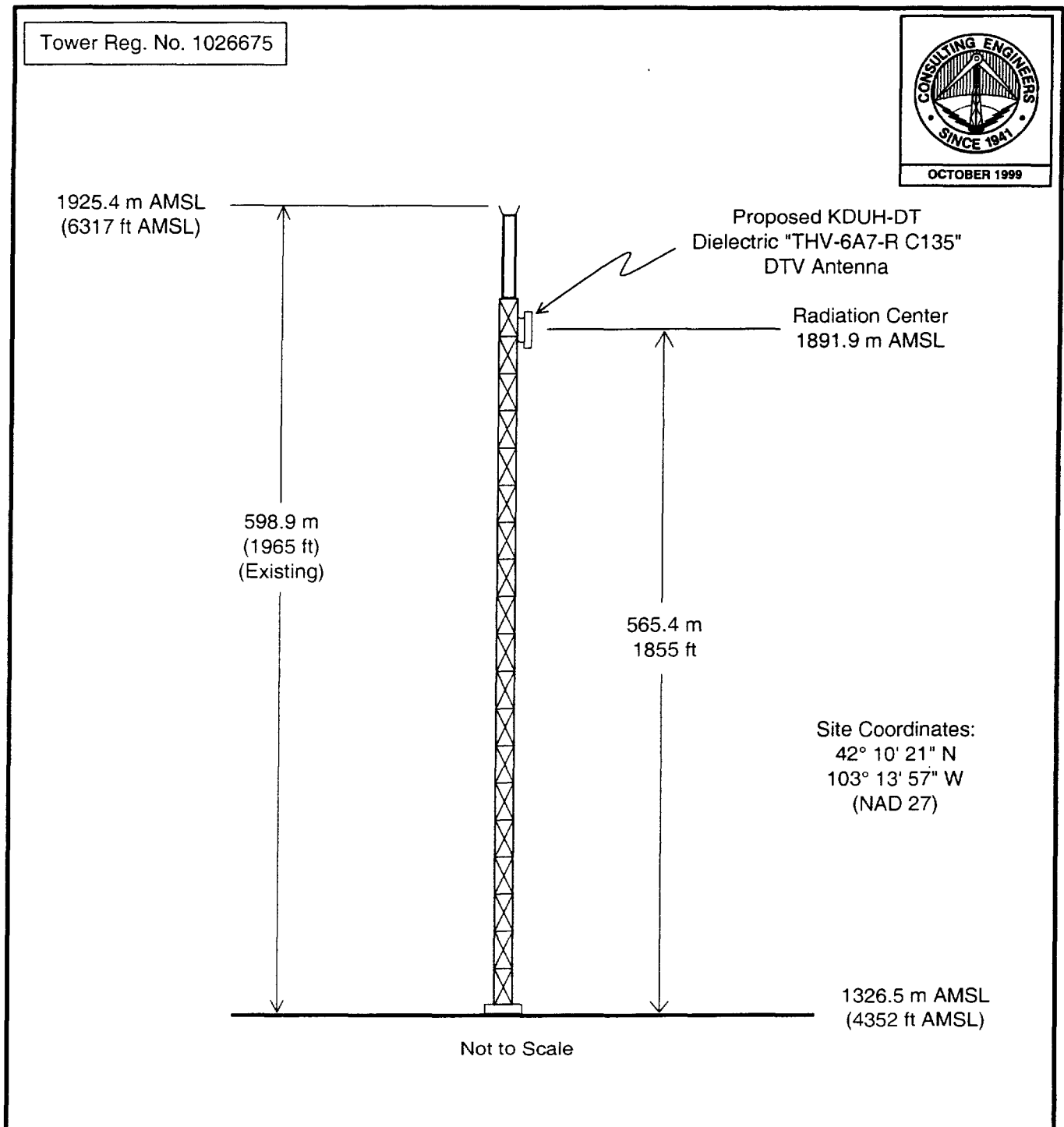
Access to the transmitting site will be restricted and appropriately marked with warning signs. As this is a multi-user site, an agreement will control access to the site. In the event that workers or other authorized personnel enter restricted areas or climb the tower, appropriate measures will be taken to assure worker safety with respect to radio frequency radiation exposure. Such measures include reducing the average exposure by spreading out the work over a longer period of time, wearing "accepted" RFR protective clothing and/or RFR exposure monitors or scheduling work when the stations are at reduced power or shut down. The proposed KDUH-TV DTV operation appears to be otherwise categorically excluded from environmental processing.


Jerome J. Manarchuck

du Treil, Lundin & Rackley, Inc.
201 Fletcher Avenue
Sarasota, Florida 34237

July 30, 1999

Figure 1



PROPOSED ANTENNA AND SUPPORTING STRUCTURE

STATION KDUH-DT
SCOTTSBLUFF, NEBRASKA
CH 7 32.4 KW (MAX-DA) 592 M
du Treil, Lundin & Rackley, Inc., Sarasota, Florida

Call Letters
Location
Customer
Antenna Type

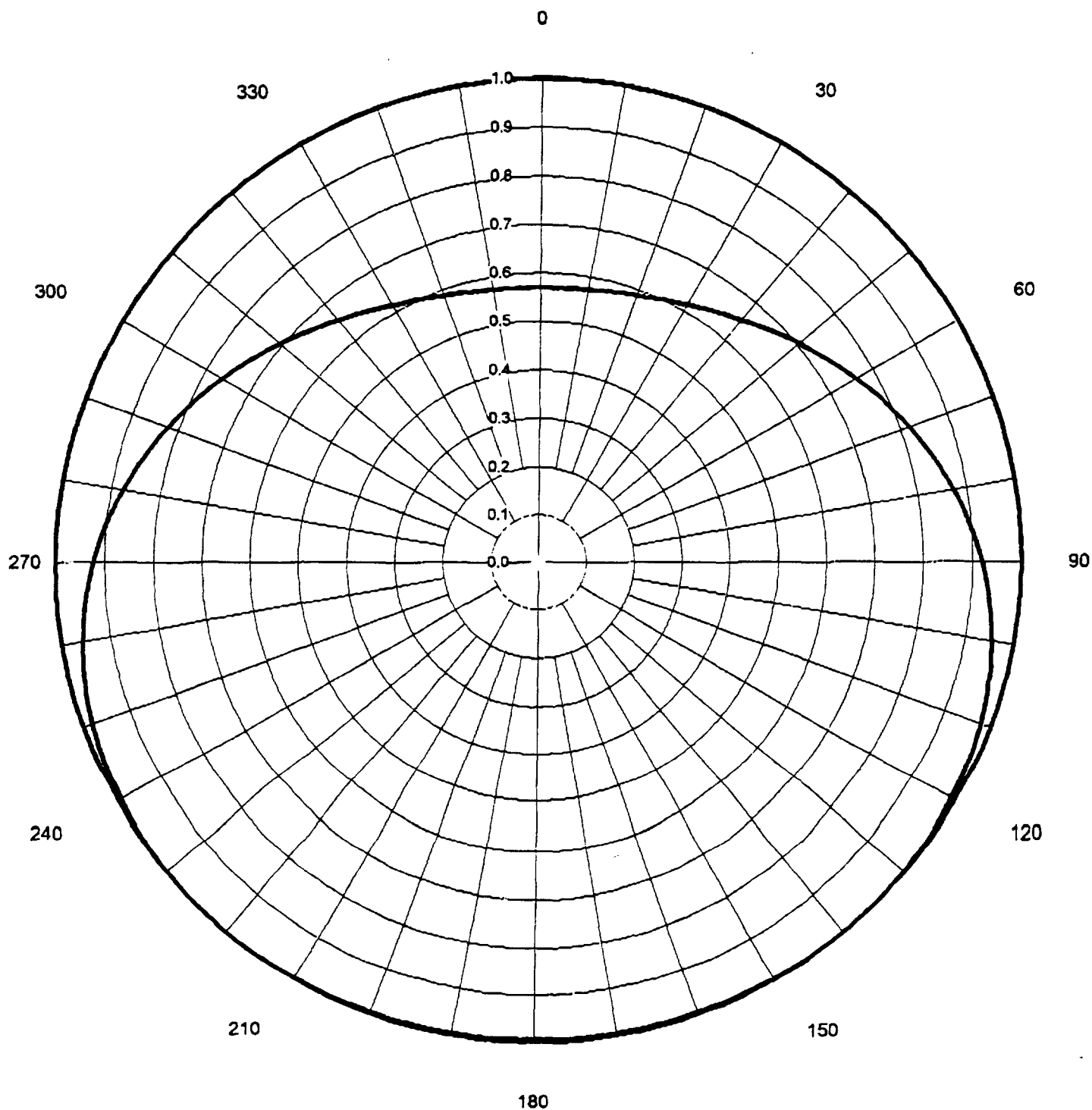
KDUH-DT
Scottsbluff, NE
THV-6A7-R C135

Channel **7**

AZIMUTH PATTERN

Gain **1.35** (**1.30 dB**)
Calculated / Measured **Calculated**

Frequency **177.00 MHz**
Drawing # **THV-C135-7**



Call Letters

KDUH-DT

Channel

7

Location

Scottsbluff, NE

Customer

Antenna Type

THV-6A7-R C135

TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing #: THV-C135-7

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.568	45	0.678	90	0.921	135	1.000	180	0.995	225	1.000	270	0.921	315	0.678
1	0.568	46	0.683	91	0.925	136	1.000	181	0.995	226	1.000	271	0.917	316	0.673
2	0.568	47	0.688	92	0.929	137	1.000	182	0.995	227	1.000	272	0.912	317	0.668
3	0.568	48	0.693	93	0.932	138	1.000	183	0.995	228	0.999	273	0.908	318	0.663
4	0.569	49	0.699	94	0.936	139	1.000	184	0.995	229	0.999	274	0.904	319	0.659
5	0.569	50	0.704	95	0.940	140	1.000	185	0.995	230	0.999	275	0.899	320	0.654
6	0.570	51	0.710	96	0.943	141	1.000	186	0.996	231	0.999	276	0.894	321	0.650
7	0.570	52	0.715	97	0.947	142	1.000	187	0.996	232	0.998	277	0.890	322	0.645
8	0.571	53	0.721	98	0.950	143	1.000	188	0.996	233	0.998	278	0.885	323	0.641
9	0.572	54	0.727	99	0.953	144	1.000	189	0.996	234	0.997	279	0.880	324	0.637
10	0.573	55	0.732	100	0.956	145	1.000	190	0.996	235	0.997	280	0.875	325	0.633
11	0.574	56	0.738	101	0.959	146	0.999	191	0.996	236	0.996	281	0.870	326	0.629
12	0.575	57	0.744	102	0.961	147	0.999	192	0.996	237	0.995	282	0.864	327	0.625
13	0.576	58	0.750	103	0.964	148	0.998	193	0.996	238	0.995	283	0.859	328	0.622
14	0.577	59	0.755	104	0.967	149	0.999	194	0.996	239	0.994	284	0.854	329	0.618
15	0.579	60	0.761	105	0.969	150	0.999	195	0.996	240	0.993	285	0.848	330	0.615
16	0.580	61	0.767	106	0.971	151	0.999	196	0.997	241	0.992	286	0.843	331	0.611
17	0.582	62	0.773	107	0.974	152	0.998	197	0.997	242	0.991	287	0.837	332	0.608
18	0.584	63	0.779	108	0.976	153	0.998	198	0.997	243	0.990	288	0.831	333	0.605
19	0.586	64	0.785	109	0.978	154	0.998	199	0.997	244	0.989	289	0.826	334	0.602
20	0.588	65	0.791	110	0.979	155	0.998	200	0.997	245	0.987	290	0.820	335	0.600
21	0.590	66	0.797	111	0.981	156	0.998	201	0.997	246	0.986	291	0.814	336	0.597
22	0.592	67	0.803	112	0.983	157	0.998	202	0.997	247	0.984	292	0.808	337	0.595
23	0.595	68	0.808	113	0.984	158	0.997	203	0.998	248	0.983	293	0.803	338	0.592
24	0.597	69	0.814	114	0.986	159	0.997	204	0.998	249	0.981	294	0.797	339	0.590
25	0.600	70	0.820	115	0.987	160	0.997	205	0.998	250	0.979	295	0.791	340	0.588
26	0.602	71	0.826	116	0.989	161	0.997	206	0.998	251	0.978	296	0.785	341	0.586
27	0.605	72	0.831	117	0.990	162	0.997	207	0.998	252	0.976	297	0.779	342	0.584
28	0.608	73	0.837	118	0.991	163	0.997	208	0.998	253	0.974	298	0.773	343	0.582
29	0.611	74	0.843	119	0.992	164	0.997	209	0.999	254	0.971	299	0.767	344	0.580
30	0.615	75	0.848	120	0.993	165	0.996	210	0.999	255	0.969	300	0.761	345	0.579
31	0.618	76	0.854	121	0.994	166	0.996	211	0.999	256	0.967	301	0.755	346	0.577
32	0.622	77	0.859	122	0.995	167	0.996	212	0.999	257	0.964	302	0.750	347	0.576
33	0.625	78	0.864	123	0.995	168	0.996	213	0.999	258	0.961	303	0.744	348	0.575
34	0.629	79	0.870	124	0.996	169	0.996	214	0.999	259	0.959	304	0.738	349	0.574
35	0.633	80	0.875	125	0.997	170	0.996	215	1.000	260	0.956	305	0.732	350	0.573
36	0.637	81	0.880	126	0.997	171	0.996	216	1.000	261	0.953	306	0.727	351	0.572
37	0.641	82	0.885	127	0.998	172	0.996	217	1.000	262	0.950	307	0.721	352	0.571
38	0.645	83	0.890	128	0.998	173	0.996	218	1.000	263	0.947	308	0.715	353	0.570
39	0.650	84	0.894	129	0.999	174	0.996	219	1.000	264	0.943	309	0.710	354	0.570
40	0.654	85	0.899	130	0.999	175	0.995	220	1.000	265	0.940	310	0.704	355	0.569
41	0.659	86	0.904	131	0.999	176	0.995	221	1.000	266	0.936	311	0.699	356	0.569
42	0.663	87	0.908	132	0.999	177	0.995	222	1.000	267	0.932	312	0.693	357	0.568
43	0.668	88	0.912	133	1.000	178	0.995	223	1.000	268	0.929	313	0.688	358	0.568
44	0.673	89	0.917	134	1.000	179	0.995	224	1.000	269	0.925	314	0.683	359	0.568

Call Letters

KDUH-DT

Location

Scottsbluff, NE

Customer

Antenna Type

THV-6A7-R C135

ELEVATION PATTERN

RMS Gain at Main Lobe **6.00 (7.78 dB)**

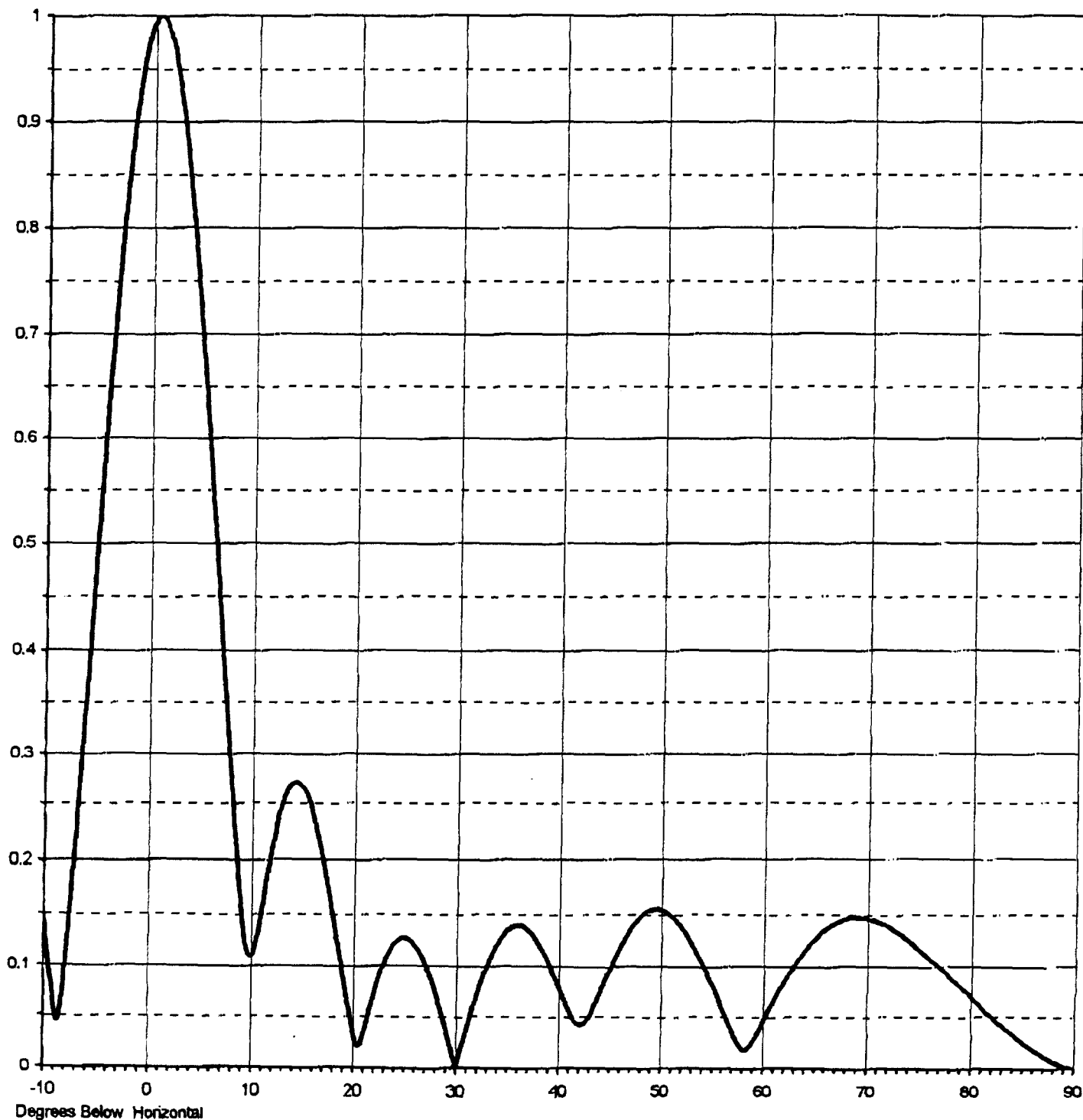
Beam Tilt **0.50 deg**

RMS Gain at Horizontal **5.90 (7.71 dB)**

Frequency **177.00 MHz**

Calculated / Measured **Calculated**

Drawing # **06V060050-90**



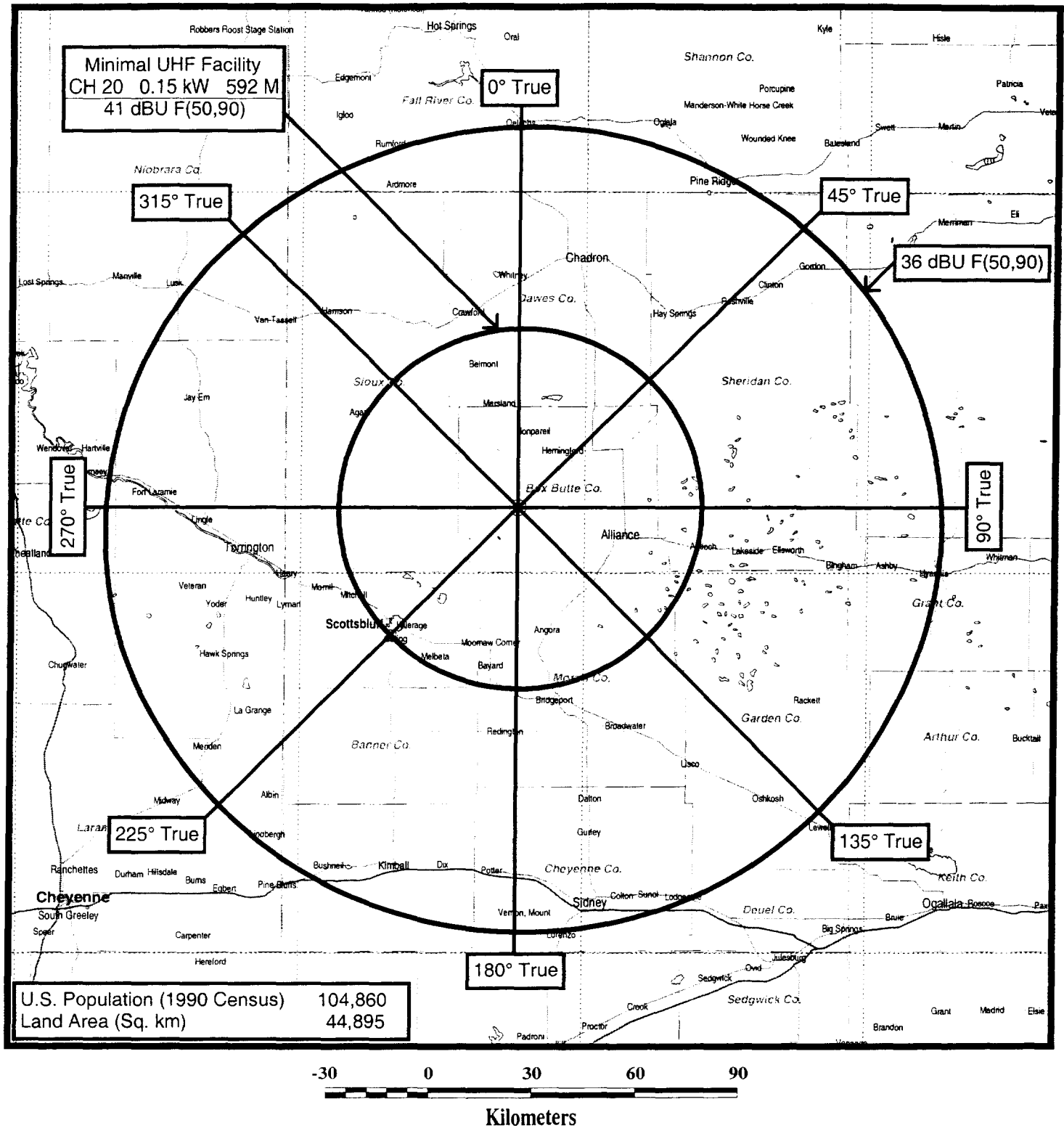
Call Letters **KDUH-DT** Channel **7**
Location **Scottsbluff, NE**
Customer
Antenna Type **THV-6A7-R C135**

TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing #: **06V060050-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.150	2.4	0.939	10.6	0.125	30.5	0.015	51.0	0.149	71.5	0.141
-9.5	0.106	2.6	0.926	10.8	0.136	31.0	0.034	51.5	0.145	72.0	0.138
-9.0	0.062	2.8	0.911	11.0	0.147	31.5	0.052	52.0	0.139	72.5	0.135
-8.5	0.048	3.0	0.895	11.5	0.178	32.0	0.069	52.5	0.132	73.0	0.132
-8.0	0.091	3.2	0.878	12.0	0.206	32.5	0.084	53.0	0.124	73.5	0.129
-7.5	0.153	3.4	0.859	12.5	0.231	33.0	0.098	53.5	0.115	74.0	0.125
-7.0	0.222	3.6	0.840	13.0	0.249	33.5	0.110	54.0	0.105	74.5	0.121
-6.5	0.294	3.8	0.820	13.5	0.262	34.0	0.121	54.5	0.095	75.0	0.117
-6.0	0.367	4.0	0.798	14.0	0.269	34.5	0.129	55.0	0.084	75.5	0.113
-5.5	0.441	4.2	0.776	14.5	0.270	35.0	0.135	55.5	0.072	76.0	0.108
-5.0	0.515	4.4	0.753	15.0	0.266	35.5	0.138	56.0	0.061	76.5	0.104
-4.5	0.587	4.6	0.729	15.5	0.257	36.0	0.140	56.5	0.049	77.0	0.099
-4.0	0.656	4.8	0.704	16.0	0.242	36.5	0.139	57.0	0.038	77.5	0.094
-3.5	0.721	5.0	0.678	16.5	0.224	37.0	0.136	57.5	0.027	78.0	0.089
-3.0	0.781	5.2	0.652	17.0	0.202	37.5	0.130	58.0	0.019	78.5	0.084
-2.8	0.804	5.4	0.626	17.5	0.177	38.0	0.123	58.5	0.018	79.0	0.079
-2.6	0.825	5.6	0.599	18.0	0.151	38.5	0.115	59.0	0.024	79.5	0.075
-2.4	0.846	5.8	0.571	18.5	0.123	39.0	0.105	59.5	0.033	80.0	0.070
-2.2	0.865	6.0	0.544	19.0	0.094	39.5	0.093	60.0	0.044	80.5	0.065
-2.0	0.883	6.2	0.516	19.5	0.066	40.0	0.081	60.5	0.054	81.0	0.060
-1.8	0.900	6.4	0.487	20.0	0.040	40.5	0.069	61.0	0.064	81.5	0.055
-1.6	0.916	6.6	0.459	20.5	0.022	41.0	0.058	61.5	0.074	82.0	0.051
-1.4	0.930	6.8	0.431	21.0	0.029	41.5	0.048	62.0	0.083	82.5	0.046
-1.2	0.944	7.0	0.403	21.5	0.049	42.0	0.043	62.5	0.092	83.0	0.042
-1.0	0.956	7.2	0.375	22.0	0.069	42.5	0.043	63.0	0.100	83.5	0.037
-0.8	0.966	7.4	0.347	22.5	0.087	43.0	0.050	63.5	0.108	84.0	0.033
-0.6	0.975	7.6	0.320	23.0	0.102	43.5	0.060	64.0	0.114	84.5	0.029
-0.4	0.983	7.8	0.293	23.5	0.113	44.0	0.071	64.5	0.122	85.0	0.025
-0.2	0.989	8.0	0.267	24.0	0.122	44.5	0.083	65.0	0.127	85.5	0.022
0.0	0.994	8.2	0.242	24.5	0.127	45.0	0.095	65.5	0.132	86.0	0.018
0.2	0.998	8.4	0.218	25.0	0.128	45.5	0.107	66.0	0.136	86.5	0.015
0.4	1.000	8.6	0.195	25.5	0.126	46.0	0.117	66.5	0.139	87.0	0.012
0.6	1.000	8.8	0.173	26.0	0.121	46.5	0.127	67.0	0.142	87.5	0.009
0.8	0.999	9.0	0.154	26.5	0.114	47.0	0.135	67.5	0.144	88.0	0.006
1.0	0.997	9.2	0.137	27.0	0.103	47.5	0.142	68.0	0.145	88.5	0.004
1.2	0.993	9.4	0.124	27.5	0.090	48.0	0.147	68.5	0.146	89.0	0.002
1.4	0.987	9.6	0.114	28.0	0.075	48.5	0.151	69.0	0.147	89.5	0.001
1.6	0.980	9.8	0.111	28.5	0.059	49.0	0.154	69.5	0.146	90.0	0.000
1.8	0.972	10.0	0.109	29.0	0.041	49.5	0.155	70.0	0.146		
2.0	0.963	10.2	0.111	29.5	0.023	50.0	0.154	70.5	0.144		
2.2	0.952	10.4	0.117	30.0	0.004	50.5	0.152	71.0	0.143		

Figure 3



PREDICTED NOISE-LIMITED CONTOUR

STATION KDUH-DT
SCOTTSBLUFF, NEBRASKA
CH 7 32.4 KW (MAX-DA) 592 M

du Treil, Lundin & Rackley, Inc. Sarasota, Florida

DTV - TV Separation Study

Job Title :KDUH-DT
Zone : 2
Channel 7 (174-180 MHz)

Separation Buffer 161 km
FCC TV DB Date : 07/23/99
Coordinates : 42-10-21 103-13-57

Call Status	City St	FCC File No.	Channel Zone	ERP(kW) HAAT(m)	Latitude Longitude	Bear. True	Dist. (km)	Req. (km)
KEVNTV LIC	RAPID CITY SD	BLCT-2543	7(+) II	263 204	44-04-00 103-15-01	359.6	210.44 -63.16	273.6 SHORT ¹
KMNETV LIC	BASSETT NE	BLET-871103KG	* 7(-) II	316 453	42-20-05 99-29-01	85.4	309.90 36.30	273.6 CLEAR
KMGHTV CP	DENVER CO	BPCT-960711KK	7(o) II	316 310	39-43-46 105-14-12	212.4	319.51 45.91	273.6 CLEAR
KMGHTV LIC	DENVER CO	BLCT-1444	7(o) II	316 308	39-43-46 105-14-12	212.4	319.51 45.91	273.6 CLEAR
KBNM CP	SHERIDAN WY	BPCT-960321KF	7(o) II	20 DA 368	44-37-20 107-06-55	312.3	415.96 142.36	273.6 CLEAR
KZSDTV LIC	MARTIN SD	BLET-901120KE	* 8(-) II	275 265	43-26-06 101-33-14	43.7	196.29 71.29	11.0/125 CLEAR
NEW APP	LARAMIE WY	BPET-921210KE	* 8(+) II	0.59 DA 322	41-18-36 105-27-17	243.3	208.22 83.22	11.0/125 CLEAR
	ERP AS SHOWN ON AMENDMENT.							
ALLOC.	LARAMIE WY	-	* 8(+) II	0	41-18-47 105-35-26	244.8	218.16 93.16	11.0/125 CLEAR

** End of TV Separation Study for Channel 7 **

¹ Using the procedures outline in FCC's OET-69 Bulletin, the proposed KDUH-DT operation complies with the FCC's 2%/10% interference standards (See Technical Narrative0.

DTV - DTV Separation Study

Job Title :KDUH-DT
Zone : 2
Channel 7 (174-180 MHz)

Separation Buffer 161 km
FCC DTV DB Date: 12/18/98
Coordinates : 42-10-21 103-13-57

Call	City	Channel	ERP(kW)	Latitude	Bear.	Dist.	Req.
Status	St	FCC File No.	Zone	HAAT(m)	Longitude	True (km)	(km)

No DTV records located on this channel & within
the required separation plus a safety factor.